

REMARKS

This Response addresses the issues raised by the Examiner in the Office Action mailed December 20, 2004. Initially, Applicant would like to thank the Examiner for the careful consideration given this case. In view of the above amendments and the following remarks, Applicant believes that all outstanding issues have been addressed and prompt allowance of all remaining claims is respectfully requested..

Claim Rejections – 35 USC § 112

The Examiner has rejected claim 9 under 35 U.S.C. § 112 as being indefinite. Applicant has amended claim 9 to depend from claim 8, rather than from claim 7, in accordance with the Examiner's recommendation. The reconsideration and withdrawal of this rejection is respectfully requested.

Claim Objections

The Examiner objected to claims 13 and 14 under 37 CFR § 1.75(c), as being of improper dependent form. Applicant has amended claim 1 to eliminate the elements of "cast iron plate" and "sound board" referenced by the Examiner. Thus, Applicant believes that the objections to claims 13 and 14 are now moot. The reconsideration and withdrawal of this objection is respectfully requested.

Claim Rejections – 35 USC § 103

Claims 1, 5-7, 10, and 13-14 stand rejected under 35 U.S.C. § 103(a) as being obvious over Jennings et al. (US 4,058,045) ("Jennings") in view of Izdebski et al. (US 4,290,331) ("Izdebski"). Applicant respectfully traverses this basis for rejection.

As noted above, Claim 1 has been amended to more specifically detail the key structural features of the present invention, and to more particularly point out and distinctly claim the subject invention.

Support for this amendment can be found at page 9, line 21 through page 11, line 21 of the specification, which clearly describes the amended structure and operation. In particular, it describe a pickup apparatus body (D), or sensor holding member. This body clearly interposes and holds a sensor member (1) between a sound board (c1) (sound source

member) and a cast-iron plate (b1) (stationary member), by contacting both the sound board and the cast-iron plate.

In particular, page 11, lines 13-14 states that this body “is sandwiched between the cast-iron plate (b1) and the sound board with appropriate force”, thereby describing that length adjustments forcibly hold the sensor in a sandwich between the two members. Thus, it is respectfully submitted that this amendment introduces no new matter into the present application.

Applicant has accordingly amended claims 2, 3, 5, 6, 8-10 and 13, to correspond with the elements recited in the newly amended independent claim 1, from which they ultimately depend, and to correct formal errors.

Again, it is respectfully submitted that these amendments, of a relatively minor nature, do not introduce new matter into the present application.

Present main claim 1, in its amended form, recites:

1. A pickup apparatus of a piano having a stationary member and a sound source member which vibrates according to a sound of the piano, comprising:

a sensor for detecting a vibration of said sound source member and a sensor holding member which contacts said stationary member and said sound source member, and keeps said sensor between said stationary member and said sound source member,

wherein said sensor holding member has a length adjusting mechanism for adjusting a length of said sensor holding member, according to a distance between said stationary member and said sound source member,

and said sensor is forcibly supported and held between said stationary member and said sound source member, upon adjustment of said length adjusting mechanism, so that a first side end of said sensor holding member contacts a stationary member side and a second side end contacts a sound source member side.

Applicant believes that Jennings and Izdebski are not combinable, nor do they suggest such a combination. Even if they can be combined, such a combination still would not make out the present invention, as recited in amended claim 1.

Jennings discloses a ceramic (piezoelectric) pickup 21 supported in a holder 22, secured rigidly to a backup plate 32. The backup plate 32 has a spring 35, "to force the pickup holder 22 firmly against the sounding board 13".

The Examiner notes that the cast-iron plate of the subject invention equals the "other suitable material" of Jennings (column 4, lines 39-47). However, Jennings uses "other suitable material" in relation to a vibration damping plate 64 of substantial inertial mass. The spring 35 then lies on the other side of this plate 64, to bear against one of the uprights 12.

Jennings discloses this plate 64 as a movable element, for functioning as a damper on the "vibrational effect of sound on the spring 35" (column 3, lines 32-33). Additionally, this spring 35 essentially varies in length on only one side of the sensor 21, and is used for firmly forcing the sensor 21 against the sounding board 13, rather than for length adjustment.

Thus, Applicant respectfully believes that this movable plate 64 cannot correspond with the cast-iron plate, or stationary member, of the present invention.

With regard to Izdebski, it again shows a pressure-adjusting means. A screw 23 is rotated to vary the pressure on a piezo-electric crystal 9, to change the quality of the sound produced. This device typically contacts the bridge of a stringed instrument.

Again, Izdebski discloses adjusting the force on only one side of the crystal 9 – the side contacting the bridge or sound source. Also, the other side of the adjusting screw 23 necessarily remains free to move in a lengthwise direction.

Therefore, Applicant believes that Jennings essentially cannot be combined with Izdebski. Jennings relies, for its operation, on a spring contacting a movable plate, which contacts the sensor. Izdebski relies for its operation on leaving an end of the screw completely free.

Furthermore, Jennings appears to teach away from going to Izdebski, in that it specifically requires a spring and a movable plate (for picking up piano sound), while Izdebski specifically requires a screw with a free end (for picking up the sound of a stringed instrument). Thus, Applicant believes that one of ordinary skill in the art would not be motivated to combine the two references, since nothing in either recitation suggests such a combination.

Applicant respectfully points out that, if the prior art references do not suggest or convey the knowledge of the subject invention, the Examiner should not generalize from the specific prior art references to arrive at the invention, which is directed at playing piano sound with higher fidelity than was enabled by the prior art. Since neither Jennings nor

Izdebski suggest the present invention, there is no proper basis or nexus for the Examiner's suggested combination of those references.

Additionally, Applicant believes that Jennings and Izdebski, even if combinable, would not make out the present invention, requiring a "sandwiching" load to support the sensor between the stationary member and the sound source member.

This "sandwiching" aspect has critical importance to the operation of the subject invention. In order to produce piano sound of high fidelity, the pickup apparatus must get forcibly supported between the stationary member and the soundboard. This sandwiching typically needs to occur near an edge of the piano, which comprises a "node" of a vibration mode. By creating a new "node" close to this existing node, one can ensure a higher fidelity of sound.

The specification explains this operation in detail at page 6, lines 21—27, as follows:

By sandwiching the rigid pickup apparatus of the present invention between the sound source member such as a sound board and the stationary member such as a cast-iron plate while applying appropriate pre-load, the vibration of the sound source member is restrained, a node of the vibration mode whose position is fixed at that point is newly created and at the same time, a force for restraining the vibration is applied to the stationary member through the rigid pickup.

Thus, the subject invention achieves higher fidelity based on the forcible "sandwiching" of the sensor between the stationary member and the sound source member, with the load appropriately calibrated, by the user, in accordance with the distance between those two piano members.

Izdebski, on the other hand, operates on the concept of leaving one end of the adjusting screw 23 completely free, rather than forcibly contacting a stationary member, as in the present invention. Thus, the rotating of the screw 23 in no way increases/decreases the force for supporting and holding the sensor in a "sandwich", as in the present invention.

Furthermore, Jennings has a movable plate 64 and a spring 35, in order to allow the sound board to move, to some degree. The present invention has an appropriate "support" load between the stationary member and the sound source member, in order to stop the sound board from moving, to some degree. These are almost opposite and very dissimilar concepts for achieving better sound fidelity.

Embodiments such as that shown in FIG. 16 of the present invention further emphasizes the need to "tightly interpose" the sensor between the two piano members. This

mode discloses rigidly sandwiching the pickup apparatus between a brace (b4) of the piano body (A) and the sound board (C), while also incorporating an angle-adjusting mechanism. Such angle adjustments further ensure that appropriately calibrated loads will be applied to the "sandwiched" sensor, to provide higher fidelity of sound.

Accordingly, the combination of Jennings and Izdebski, even if possible, would still not suggest essential features of the present invention.

For all of the above stated reasons, claims 1, 5-7, 10, and 13-14 patentably distinguish over any combination of the cited references.

Claims 11 and 12 have been canceled herewith. Claims 2, 3, 8, 9 and 15 also stand rejected under 35 U.S.C. § 103(a) as being obvious over Jennings in view of Izdebski, and further in view of the Examiner's other respectively cited references. However, these claims ultimately depend from and include all of the subject matter of claim 1, which has been shown to be allowable over Jennings in view of Izdebski. Accordingly, claims 2, 3, 8, 9 and 15 are also allowable over their respective cited references.

Conclusion

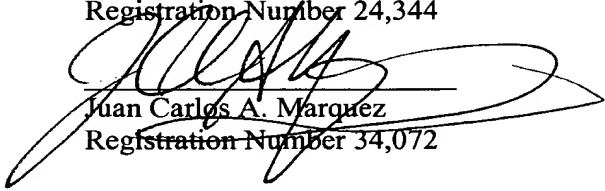
Having fully addressed the Examiner's rejection of all of the claims 1-3, 5-10, and 13-15, Applicant submits that the reasons for the Examiner's rejections have been overcome. Applicant respectfully requests that the amendments be entered and a Notice of Allowance be issued.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to

contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,

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